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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Bradley J. Booth

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EXAMINER

BARQADLE, YASIN M

ART UNIT

PAPER NUMBER

2153

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/645,045	Applicant(s) BOOTH ET AL.	
	Examiner YASIN M. BARQADLE	Art Unit 2153	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/31/2008, 6/13/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 31, 2008 has been entered.

Response to Amendment

2. The amendment filed on March 31, 2008 has been fully considered but are moot in view of the new grounds of rejection.

- Claims 1-36 are presented for examination.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-5, 9-12, and 16-18, 21-22, 26-31 and 35-36 are rejected under 35 U.S.C. 102 (b) as being anticipated by Krishna et al, hereafter referenced as "Krishna").

For claims 1, 11 and 18:

A media access controller (MAC) (Figure 1, MAC 24); and

A communication device comprising:

A media independent interface (MII 38, Figure 1) coupled to the MAC to at least one of transmit and receive data at a data rate (see Figure 1 and fig. 3C; col. 2, lines 36-50. See also col. 4, lines 1-11);

a plurality of data lane interfaces, each data lane interface being capable of at least one of transmitting a serial data signal to and receiving a serial data signal from a data lane in a device-to-device interconnection (fig. 1 and Figure 3C; col. 2, lines 36-50. See also col. 4, lines 17-41); and

a transmitter coupled to the MII to receive data from the MII and coupled to selectively transmit the data to one or more of the data lane interfaces at a variable rate dependent upon a number of the data lane

interfaces to which the transmitter is transmitting the data (abstract and col. 2, lines 36-50. See also col. 7, lines 34-43).

For claim 2:

The system of claim 1 (see supra for discussion), wherein the system further comprises a switch fabric coupled to the MAC (fig. 1 and col. 7, lines 44-51).

For claim 3:

The system of claim 1 (see supra for discussion), wherein the system further comprises a packet classification device coupled to the MAC (col. 7, lines 44-65).

For claim 4:

A device comprising:

a media independent interface (MII) to at least one of transmit and receive data at a data rate (see Figure 1 and fig. 3C; col. 2, lines 36-50. See also col. 4, lines 1-11);

a plurality of data lane interfaces, each data lane interface being capable of at least one of

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transmitting the serial data signal to and receiving a serial data signal from a data lane in a device-to-device interconnection ((fig. 1 and Figure 3C; col. 2, lines 36-50. See also col. 4, lines 17-41); and

a receiver coupled to receive one more of the serial data signals from one or more corresponding data lane interface, the receiver further coupled to transmit the data to the MII at a variable rate dependent upon a number of the data lane interfaces from which the receiver is receiving the one or more serial data signals (abstract and col. 2, lines 36-50. See also col. 7, lines 34-43).

For claim 5:

the device of claim 4 (see supra for discussion), wherein each data lane interfaces is associated with a first differential pair to transmit a serial data signal and a second differential pair to receive a serial data signal (see Figure 1).

For claims 9 and 16:

The device of claim 4, wherein the device-to-device interconnection comprises printed circuit board traces (col. 3, lines 5-9).

For claim 10 and 17:

The device of claim 4 (see supra for discussion), wherein the device-to-device interconnection comprises a cable (col. 3, lines 1-5).

For claim 12:

The method of claim 11 (see supra for discussion), the method further comprising:

transmitting one or more serial data signals to the device-to-device interconnection in a first differential pair signal (col. 2, lines 36-50. See also col. 7, lines 34-43); and

receiving one more serial data signals from the device-to-device interconnection in a second differential pair signal (see Figure 1 or 3A-C).

For claim 19:

The system of claim 18 (see supra for discussion), wherein the physical layer communication device is

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adapted to transmit data between the MII and a fiber optic cable (see Figure 3, 4, 5 or 6, Optical interfaces from 10 G serDes).

For Claims 21, 26-27, 30 and 35, these claims include similar limitations as taught in claim 1 above.

Krishna further teaches the invention as publication teaches a physical coding sublayer and physical media dependent section, wherein the PMD section is coupled to the PCS section to signal to the PCS section a number of the data lane interfaces actively transmitting a serial data (see fig. 1 and 3A-C); and

logic to vary the data rate based, at least in part, upon [[a]]the number of the data lane interfaces actively transmitting a serial data signal to or actively receiving a serial data signal from the device-to-device interconnection (col. 2, lines 36-50. See also col. 7, lines 34-43).

For Claims 22 and 31:

Krishna teaches the invention (see supra for discussion), wherein each data lane interfaces is associated with a first differential pair to transmit a serial data signal and a second differential pair to receive a serial data signal (see Figure 1 and fig. 3A-C).

For claim 28:

Krishna teaches the invention, wherein the device-to-device interconnection comprises printed circuit board traces (col. 3, lines 5-9).

For claim 29:

Krishna teaches the invention (see supra for discussion), wherein the device-to-device interconnection comprises a cable (col. 3, lines 1-5).

For claim 36:

Krishna teaches the, wherein the transmitter comprises a state machine and wherein the transmitter is coupled to receive a transmit clock signal (TX_CLK) having a frequency dependent upon the number of the data lane interfaces actively transmitting a serial data signal (col. 5, lines 2-24).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this

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Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 6-8, 13-15, 23-25, and 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krishna in view of Agilent Technologies product notes (Dated January 2002, hereafter referenced as "Agilent").

Regarding claims 6-8, 13-15, Krishna teaches the invention as explained above including upgradeable Gigabit data links without software modifications (col. 8, lines 13-17). However, Krishna is silent about using 10 Gigabit attachment interface and a plurality of 8B 10B decoders, each 8B 10B decoder being associated with one of the data lane interfaces.

In analogous art, Agilent teaches using 10 Gigabit attachment interface and a plurality of 8B 10B decoders, each 8B 10B decoder being associated with one of the data lane interfaces ((See Figure 7, XAUI Interface and Figure 6 or 5, 8B/10B interfaces). It would have been obvious to one ordinary skill

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in the art to combine Agilent's 10 Gigabit with plurality of 8B 10B decoders in order to interface with devices that are capable of receiving and transmitting higher data rates.

Regarding claims 7 and 14, Agilent further teaches the device of claim 4 (see supra for discussion), wherein the device further comprises:

a plurality of 8B 10B decoders, each 8B 10B decoder being associated with one of the data lane interfaces, each 8B 10B decoder being capable of decoding one eight bit byte from a differential pair on first intervals of a first clock signal (see Figure 6 or 5, 8B/10B interfaces); a receive state machine to provide a fixed length data signal to the Mll on second intervals of a second clock signal; and logic to vary the second intervals based upon a number of the data lane interfaces actively receiving serial data from the device-to-device interconnection (to strobe data to be transmitted, the strobe clock frequency has to be changed).

Regarding claims 8 and 15, Agilent teaches the device of claim 4, wherein the device further

comprises: a transmit state machine to receive a fixed length data signal from the MII on first intervals of a first clock signal; a plurality of 8B 10B encoders, each 8B 10B encoder being associated with one of the data lane interfaces, each 8B 10B encoder being capable of encoding one eight bit byte of the fixed length data signal for transmission to a differential pair on first intervals of a first clock signal (Figure 5 or 6, showing of 8B/10B encoder/decoder serves for each of data lanes); and logic to vary the second intervals based upon a number of the data lane interfaces actively transmitting serial data from to the device-to-device interconnection (to strobe data to be transmitted, the strobe clock frequency has to be changed).

10. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krishna.

Krishna teaches everything (for discussion see claim 19 supra) except for adapting physical communication device to transmit data between the MII and fiber optic cable.

The general concept of adapting physical communication device to transmit data between the MII and fiber optic cable is well known in the art as illustrated by Agilent (see Figure 3, 4, 5 or 6, Optical interfaces from 10 G serDes).

It would have been obvious to one skilled in the art at the time of invention to modify Krishna with fiber optic cable in order to be back word compatible with Fiber optic media device and to send higher data than a Gigabit as provided by Krishna.

As for claims 23-25 and 32-34 (see the rejection of claims 6-8 above. They are rejected with the same rationale.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yasin Barqadle whose telephone number is 571-272-3947. The examiner can normally be reached on 9:00 AM to 5:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Burgess can be reached on 571-272-3949. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either private PAIR or public PAIR system. Status information for unpublished applications is available through private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Yasin M Barqadle/

Primary Examiner, Art Unit 2153